

1. Method for preparing a wet strength agent comprising a first step of reacting a nitrogen-containing polymer with a hydrophobic compound to form hydrophobic side-chain substituents on the polymer, a second step of reacting the hydrophobised nitrogen-containing polymer obtained with a crosslinker to form a cationic nitrogen-containing resin, and a third step comprising forming of particles by emulsion polymerisation of one or more ethylenically unsaturated monomers in the presence of the wet strength resin formed.

2. Method according to claim 1 w h e r e i n the nitrogen-containing polymer is a polyamine or a polyaminoamide.

claim 1
3. Method according to ~~any of the claims 1-2~~ wherein the first step is a vinyllog addition or alkylation where the hydrophobic compound is selected from alkyl(meth)acrylates, alkyl(meth)acrylamides, alkyl sulphonates, alkyl sulphates, diazo compounds, ethers, ~~epoxides and~~ *epoxides and* or mixtures thereof.

4. Method according to claim 1 w h e r e i n the hydrophobic compounds comprise a hydrophobic chain having 6-40 carbon atoms.

5. Method according to claim 1 w h e r e i n the hydrophobic compounds comprise a hydrophobic chain having 8-40 carbon atoms.

6. Method according to claim 1 w h e r e i n the hydrophobic compound contains a chain of atoms containing at least one hetero atom.

7. Method according to claim 1 w h e r e i n the crosslinker is epichlorohydrin.

8. Method according to claim 1 w h e r e i n the monomers are selected from styrene, butadiene, alkyl (meth)acrylates, alkyl(meth)amides, (meth)acrylonitrile, vinyl acetate, or vinyl amide, or mixtures or derivatives thereof.

9. Method as claimed in claim 1 w h e r e i n the hydrophobic compound is a saturated compound, or an unsaturated compound, resulting in a nitrogen-containing polymer having saturated side-chain substituents.

10. Paper wet strength agent obtainable by a method as defined in claim 9.

11. Paper wet strength agent comprising a wet strength resin comprising cationic nitrogen-containing polymers having hydrophobic saturated side-chain substituents and groups derived from a crosslinker; and polymeric particles.

12. Paper wet strength agent according to claim 11 w h e r e i n the hydrophobic side-chain substituents contain a hydrophobic group attached to a nitrogen atom of the nitrogen-containing polymer via a chain of atoms comprising 6-40 carbon atoms.

claim 11
13. Paper wet strength agent according to ~~any of claims 11-12~~ w h e r e i n the hydrophobic side-chain substituents are selected from derivatives of alkyl(meth)acrylates, *the group consisting of*

a alkyl(meth)acrylamides, alkyl sulphonates, alkyl sulphates, diazo compounds, ethers, ~~or~~
a ~~epoxides and~~
~~epoxides or mixtures thereof.~~

14. Method for preparing a wet strength resin comprising a first step of reacting a nitrogen-containing polymer with a hydrophobic compound to form hydrophobic side-chain substituents, in which said hydrophobic compound is selected from alkyl(meth)acrylates, alkyl(meth)acrylamides, alkyl sulphonates, alkyl sulphates, diazo compounds, ethers, or epoxides or mixtures thereof, and a second step of reacting the hydrophobised nitrogen-containing polymer obtained with a crosslinker to form a cationic nitrogen-containing resin.

15. Method according to claim 14 wherein the hydrophobic compound contains 6-40 carbon atoms.

a 16. Method as claimed in ^{claim 14} ~~claims 14 or 15~~ wherein the hydrophobic compound is a saturated compound, or an unsaturated compound, resulting in a nitrogen-containing polymer having saturated side-chain substituents.

a 15 17. Paper wet strength resin obtainable by a method as defined in ^{claim 14} ~~claims 14-15~~.

a 18. Paper wet strength resin comprising cationic nitrogen-containing polymers ^{the group consisting of} having saturated hydrophobic side-chain substituents selected from compounds derived from alkyl(meth)acrylates, alkyl(meth)acrylamides, alkyl sulphonates, alkyl sulphates, ^{epoxides} diazo compounds, ethers, ~~or epoxides~~ or mixtures thereof; and groups derived from a crosslinker.

a ^{adding} 19. Process for production of tissue paper comprising ~~addition of~~ a paper wet strength resin or agent, ~~comprising~~ a cationic nitrogen-containing polymer having hydrophobic side-chain substituents, to an aqueous cellulosic suspension.

20. Process according to claim 19, wherein the paper wet strength resin or agent is added in an amount of from about 5 to about 50 kg/tonne dry cellulosic fibres.

a 21. Process according to ^{claim 19} ~~claims 19 or 20~~, wherein the paper wet strength resin is added in an amount of from about 15 to about 50 kg/tonne dry cellulosic fibres.

22. Process according to claim 20, wherein the paper wet strength resin is added in an amount of from about 25 to about 50 kg/tonne dry cellulosic fibres.

30 23. Process according to claim 20, wherein a dry strength agent is added in combination with the paper wet strength resin or agent.

24. Process according to claim 20, wherein the produced tissue paper has a grammage lower than about 70 g/m².

a ^{B2} 25. Tissue paper comprising a paper wet strength resin or agent comprising a cationic nitrogen-containing polymer having hydrophobic side-chain substituents.

0051166-11500

26. Tissue paper according to claim 25, wherein the tissue paper comprises a paper wet strength resin or agent in an amount from about 5 to about 50 kg/tonne dry cellulosic fibres.

27. Tissue paper comprising a paper wet strength resin or agent obtainable by a method according to ^{claim 19}~~any of claims 10-24~~.

a

add
B3

09713165 111500